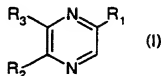


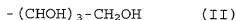
CLAIMS

1. A pharmaceutical composition comprising at least one compound of general formula:



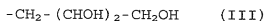
in which

R₁ represents the stereoisomeric forms of the chain

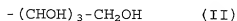


and

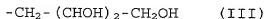
either (A) R₂ represents a hydrogen atom and R₃ represents the stereoisomeric forms of the chain



or (B) R₂ represents the stereoisomeric forms of the chains



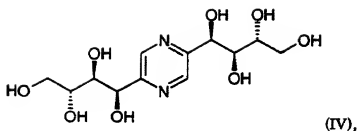
or



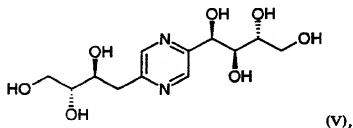
and R₃ represents a hydrogen atom, or a salt thereof with an organic or inorganic acid,

provided however, that said compound is not

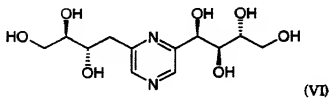
- fructosazine of formula



- deoxyfructosazine of formula



- or the compound of formula



2. A pharmaceutical composition according to claim 1

comprising a compound selected from the group consisting of:

1- [5- (1R,2R,3R,4-tetrahydroxybutyl)pyrazin-2-yl]butane-1R,2R,3R,4-tetraol

1- [5- (1R,2R,3S,4-tetrahydroxybutyl)pyrazin-2-yl]butane-1R,2R,3S,4-tetraol

1- [5- (1R,2S,3S,4-tetrahydroxybutyl)pyrazin-2-yl]butane-1R,2S,3S,4-tetraol

1- [5- (1S,2R,3R,4-tetrahydroxybutyl)pyrazin-2-yl]butane-1S,2R,3R,4-tetraol

1- [5- (1S, 2R, 3S, 4-tetrahydroxybutyl)pyrazin-2-yl]butane-1S, 2R, 3S, 4-tetraol

1- [5- (1S, 2S, 3R, 4-tetrahydroxybutyl)pyrazin-2-yl]butane-1S, 2S, 3R, 4-tetraol

1- [5- (1S, 2S, 3S, 4-tetrahydroxybutyl)pyrazin-2-yl]butane-1S, 2S, 3S, 4-tetraol

1- [5- (2R, 3R, 4-trihydroxybutyl)pyrazin-2-yl]butane-1R, 2R, 3R, 4-tetraol

1- [5- (2R, 3S, 4-trihydroxybutyl)pyrazin-2-yl]butane-1R, 2R, 3S, 4-tetraol

1- [5- (2S, 3S, 4-trihydroxybutyl)pyrazin-2-yl]butane-1R, 2S, 3S, 4-tetraol

1- [5- (2R, 3R, 4-trihydroxybutyl)pyrazin-2-yl]butane-1S, 2R, 3R, 4-tetraol

1- [5- (2R, 3S, 4-trihydroxybutyl)pyrazin-2-yl]butane-1S, 2R, 3S, 4-tetraol

1- [5- (2S, 3R, 4-trihydroxybutyl)pyrazin-2-yl]butane-1S, 2S, 3R, 4-tetraol

1- [5- (2S, 3S, 4-trihydroxybutyl)pyrazin-2-yl]butane-1S, 2S, 3S, 4-tetraol

1- [6- (2R, 3R, 4-trihydroxybutyl)pyrazin-2-yl]butane-1R, 2R, 3R, 4-tetraol

1- [6- (2R, 3S, 4-trihydroxybutyl)pyrazin-2-yl]butane-1R, 2R, 3S, 4-tetraol

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1- [6- (2R,3R,4-trihydroxybutyl)pyrazin-2-yl]butane-1S,2R,3R,4-tetraol

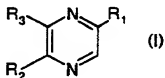
1- [6- (2R,3S,4-trihydroxybutyl)pyrazin-2-yl]butane-1S,2R,3S,4-tetraol

1- [6- (2S,3R,4-trihydroxybutyl)pyrazin-2-yl]butane-1S,2S,3R,4-tetraol

1- [6- (2S,3S,4-trihydroxybutyl)pyrazin-2-yl]butane-1S,2S,3S,4-tetraol

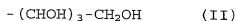
or a salt of such a compound with an inorganic or organic acid.

3. A compound of formula:



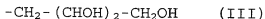
in which

R_1 represents the stereoisomeric forms of the chain

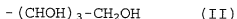


and

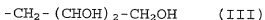
either (A) R_2 represents a hydrogen atom and R_3 represents the stereoisomeric forms of the chain



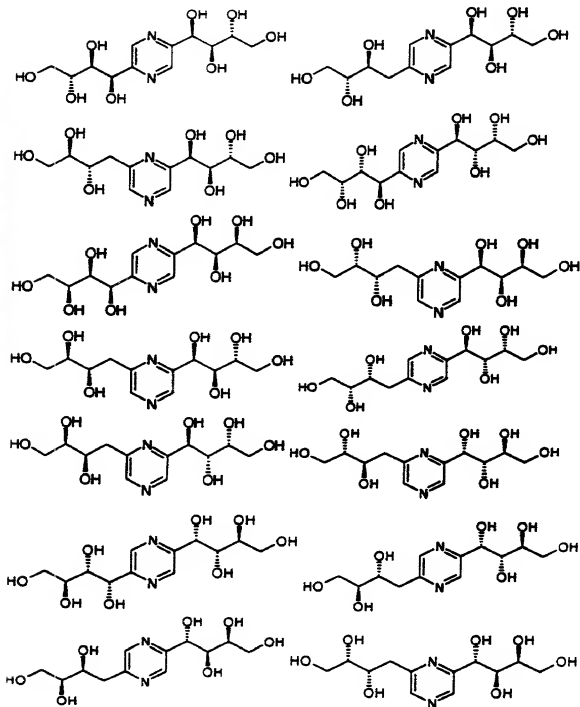
or (B) R_2 represents the stereoisomeric forms of the chains



or



and R_3 represents a hydrogen atom,
or a salt thereof with an inorganic or organic acid,
provided, however, that said compound is not a compound having any
of the following structures:



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4. A compound according to claim 3 selected from the group consisting of:

1-[5-(1R,2R,3S,4-tetrahydroxybutyl)pyrazin-2-yl]butane-1R,2R,3S,4-tetraol

1-[5-(1S,2R,3R,4-tetrahydroxybutyl)pyrazin-2-yl]butane-1S,2R,3R,4-tetraol

1-[5-(1S,2S,3R,4-tetrahydroxybutyl)pyrazin-2-yl]butane-1S,2S,3R,4-tetraol

1-[5-(1S,2S,3S,4-tetrahydroxybutyl)pyrazin-2-yl]butane-1S,2S,3S,4-tetraol

1-[5-(2R,3S,4-trihydroxybutyl)pyrazin-2-yl]butane-1R,2R,3S,4-tetraol

1-[5-(2S,3S,4-trihydroxybutyl)pyrazin-2-yl]butane-1R,2S,3S,4-tetraol

1-[5-(2R,3R,4-trihydroxybutyl)pyrazin-2-yl]butane-1S,2R,3R,4-tetraol

1-[5-(2S,3R,4-trihydroxybutyl)pyrazin-2-yl]butane-1S,2S,3R,4-tetraol

1-[6-(2R,3S,4-trihydroxybutyl)pyrazin-2-yl]butane-1R,2R,3S,4-tetraol

1-[6-(2R,3R,4-trihydroxybutyl)pyrazin-2-yl]butane-1S,2R,3R,4-tetraol

1-[6-(2S,3R,4-trihydroxybutyl)pyrazin-2-yl]butane-1S,2S,3R,4-tetraol

or a salt of such a compound with an inorganic or organic acid.

5. A compound according to claim 3 selected from the group consisting of:

1-[5-(2S,3S,4-trihydroxybutyl)pyrazin-2-yl]butane-1R,2S,3S,4-tetraol

1-[5-(2R,3R,4-trihydroxybutyl)pyrazin-2-yl]butane-1S,2R,3R,4-tetraol

1-[5-(2S,3R,4-trihydroxybutyl)pyrazin-2-yl]butane-1S,2S,3R,4-tetraol

and their salts with an inorganic or organic acid.

6. A process for the preparation of a compound according to claim 3 in which R_1 of formula (I) represents the stereoisomeric forms of the $-(CHOH)_3-CH_2OH$ chain (II), R_2 represents a hydrogen atom and R_3 represents the stereoisomeric forms of the $-CH_2-(CHOH)_2-CH_2OH$ chain (III), said process comprising reacting ammonium formate with an aldose, or a mixture of two aldoses, of the dextrorotatory or levorotatory series, of general formula:



in which R_1 has the same meaning as in claim 3, isolating the product and optionally converting it to a salt.

7. A process according to claim 6 in which the aldose is selected from D-gulose, D-galactose, D-allose, D-altrose, D-

idose, D-talose, L-glucose, L-mannose, L-galactose, L-allose, L-altrose, L-idose, L-talose and L-gulose.

8. A process for the preparation of a compound according to claim 3 in which R_1 of formula (I) represents the stereoisomeric forms of the $-(CHOH)_3-CH_2OH$ chain (II), R_2 represents the stereoisomeric forms of the $-(CHOH)_3-CH_2OH$ chains (II) and R_3 represents a hydrogen atom, said process comprising treating aminoaldose, or a mixture of 2 aminoaldoses, of general formula $CHO-CH(NH_2)-R_1$ (XI) in which R_1 has the same meaning as in claim 3, isolating the product and optionally converting it to a salt with an inorganic or organic acid.

9. The process according to claim 8 in which said aminoaldose is D-galactosamine.

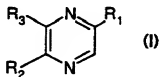
10. A process for the preparation of a compound according to claim 3 in which R_1 of formula (I) represents the stereoisomeric forms of the $-(CHOH)_3-CH_2OH$ chain (II), R_2 represents the stereoisomeric forms of the $-CH_2-(CHOH)_2-CH_2OH$ chain (III) and R_3 represents a hydrogen atom, said process comprising treating an aminoaldose, or a mixture of two aminoaldoses of general formula $CHO-CH(NH_2)-R_1$ (XI), in which R_1 has the same meaning as in claim 3, in acidic medium, isolating the product and optionally converting it to a salt with an inorganic or organic acid.

11. A process according to claim 10 in which said aminoaldoses or mixture of aminoaldoses comprises D-galactosamine.

12. A process for the preparation of a compound according to claim 3 in which R_1 of formula (I) is a stereoisomeric form of $-(CHOH)_3-CH_2OH$ chain (II), R_2 is a stereoisomeric form of $-CH_2-(CHOH)_2-CH_2OH$ chain (III) and R_3 is a hydrogen atom, said process comprising reacting a ketose, or a mixture of two ketoses, of general formula $HOCH_2-CO-R_1$ (XII) in which R_1 has the same meaning as in claim 3, with ammonium formate and isolating the product, and optionally converting the product to a salt with an inorganic or organic acid.

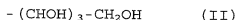
13. A process according to claim 12 wherein said ketose of formula (XII) is selected from D-psicose, D-sorbose, D-tagatose, L-psicose, L-fructose, L-sorbose and L-tagatose.

14. A method for the treatment or prevention of diabetes or complications of diabetes, this method comprising administering to a patient in need of such treatment an effective amount of a compound of formula (I)



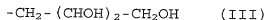
in which

R_1 is any of the stereoisomeric forms of the chain

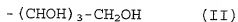


and

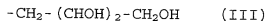
either (A) R_2 is a hydrogen atom and R_3 is any of the stereoisomeric forms of the chain



or (B) R_2 is any of the stereoisomeric forms of the chains



and

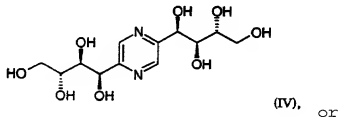


and R_3 is a hydrogen atom,

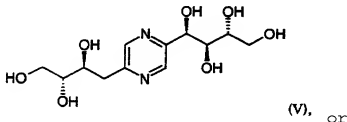
or their salts with an inorganic or organic acid, in a pharmaceutically acceptable vehicle,

provided, however, that said compound is not

- fructosazine of formula

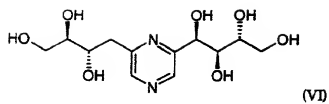


- deoxyfructosazine of formula



- a compound of formula

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